

ASTRONOMY

Visits of Mexicans to Aid Astronomical Cooperation

► ASTRONOMY is helping the good neighbor policy. A group of Mexicans visited Harvard University the week of April 5 to return the visit a year ago of a delegation of American scientists to the opening of the new Mexican National Astrophysical Observatory.

Senor Luis Enrique Erro, director of the new observatory at Tonanzintla, has a Harvard-inspired love of astronomy. It was he who conceived the idea of a new national observatory for Mexico.

Dr. Gonzalo Bautista, governor of the state of Puebla, offered the site at Tonanzintla. Despite war scarcities, a Schmidt telescope for the observatory was made through the cooperation of Harvard Observatory and a Connecticut optical firm.

Governor Bautista, Ambassador Castillo Najera and Director Erro were among those visiting Cambridge. The American Academy of Arts and Sciences held a special meeting in honor of the delegation.

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PUBLIC HEALTH

Urge Steps to Avoid Pearl Harbor of Hospitals

► "WE WILL face a Pearl Harbor of hospitals" as war casualties mount unless steps are taken at once to survey existing hospital facilities and to prepare scientifically for their expansion, former Congressman Maury Maverick declared at the meeting of surgeons and hospital administrators held by the American College of Surgeons.

As Director of the Governmental Division of the War Production Board, Mr. Maverick assured his audience that, in spite of shortages of material, "whatever is absolutely indispensable in the proper conduct of hospitals will be made available."

War casualties on a "gigantic scale" must be prepared for, Mr. Maverick stated. No one knows how many these will be, but from current and historical comparisons he gave, the number will be at least between one and two million, maybe many more.

To solve the problem of preparing enough hospital facilities for the war wounded and the civilians, Mr. Maverick proposed that a national committee should be created by joint action of Congress and the President. The committee should include representatives "of the

great professional organizations of America, such as the American Hospital Association, the American College of Surgeons and others," he said.

"I do not mean," he added, "that one central command should run all hospitals, far from it."

The committee would be a fact-finding one, to determine present weak spots and inadequacies, to survey the needs not only in relation to war casualties but for the civilian population now and in the future, and to make recommendations for suitable expansion of hospital facilities.

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ENGINEERING

Country Lane Is Model for Wartime Emergency Road

► NEW wartime roads stem directly from the country lanes and garden paths that everyone has trod. When the emergency demanded vast expansion of the nation's road network for war transport and potential military use, engineers grabbed at the basic idea of compacted soil and gravel which compose ancient byways.

Test data and production methods had to be developed on a large scale basis under conditions that would make the road stand up under the pounding of war traffic.

"The stabilized soil road has not completely emerged from the realm of research," Highway Research Board officials report, "and yet because of its potential advantages it is called upon to play a most important part in the nation's war effort."

Essentially it is just dirt with some gravel, crushed stone, or other granular material thrown in. The granular part furnishes strength and hardness, just as it does in concrete; silt functions as filler to help seat the particles, and the clay cements the whole into a tough mass.

Oldtimers would add a bit of cinders when the lane got muddy or add some dirt to compact a loose gravel spot. But the long ribbons of emergency roads can't be laid by trial and error.

Tests for designing mixtures and controlling construction operations have been worked out by engineers. Although relatively few highway engineers are familiar with the quirks of this new application of the old time road, the tests are simple and elaborate equipment is not needed. Granular material at hand is graded for size and the soil to be used is tested for its binding properties.

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IN SCIEN

HORTICULTURE

Heavy Clay Soil Improved By Addition of Coal Ashes

► VICTORY GARDENERS who have heavy clay soil to contend with may be able to improve its texture by the addition of sifted anthracite coal ashes and at the same time dispose of the ashes. Coal ash, it is pointed out, improves only the physical state of the soil; it is not a fertilizer. And only anthracite ashes are safe to use.

Clay soils are sticky when wet, and hard when dry. Coal ashes will decrease the stickiness and help prevent the hardness. The amount to use depends upon the soil, but ordinarily two inches of ashes plowed or spaded into six inches of the topsoil is sufficient. The ashes and soil should be well mixed. Vegetables, flowers and grasses will grow better in soil so treated and the labor of taking care of the garden is lessened.

Sandy soils are also improved by anthracite ashes. Their moisture retention properties are increased. In this the ashes have an effect similar to that of humus.

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INVENTION

Freeze-Proof Mouthpiece Devised for Parka

► FOR USE in extremely cold climates, F. G. Manson and J. J. Maskey of Dayton, Ohio, have invented a non-freezing mouthpiece for a weather-proof parka or head-covering mask, that will give the wearer the appearance of having a short, very stiff beard sticking straight forward.

It will not be a beard, however, but a somewhat loosely packed bundle of stiff bristles or hairs, such as wolverine or horsehair, laid parallel. Ice will not form between these bristles, the inventors claim, no matter how bitter the cold. All that will happen will be the development of a white frost at their outer ends, and this can be knocked off from time to time by a flip of the wearer's glove.

Rights in the patent, no. 2,314,889, are assigned royalty-free to the government.

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CE FIELDS

MEDICINE

Fishing Equipment Needed for Emergency Use by Navy

➤ HOOK, LINE AND SINKER—and all the rest of your fishing equipment are needed to help save the lives of our fighting men. An appeal has gone out from the Medical and Surgical Relief Committee of America.

Mrs. Huttleson Rogers, executive chairman of the committee, urges that all fishermen, sporting goods dealers, and fishing clubs send her organization their spare or discarded fishing tackle. They are needed to help equip special emergency medical kits earmarked for the U. S. Coast Guard and the U. S. Navy.

A simple fishing outfit, for use in time of disaster, is now being included in the portable kit along with essential drugs and emergency surgical instruments. Already the lives of U. S. survivors of torpedoed boats have been saved by catching fish, which are not only valuable for food, but also contain water.

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PHARMACY

Push to Find Antimalaria Chemical Going Forward

➤ A GREAT push to find a chemical remedy for malaria "which will not have the deficiencies of quinine, plasmochin and atabrine" is going forward, Col. Paul F. Russell, of the Medical Department of the Army of the United States, reported in the Hermann M. Biggs Memorial Lecture at the New York Academy of Medicine.

"The need is apparent," he said, "when it is recalled that not one of this trio will cure with certainty, not one is a true prophylactic drug, and not one is of much value in the control of community malaria. It seems reasonable to hope that a more effective antimalarial will be developed in the not too distant future."

Notable progress in controlling malaria even in tropical villages has been achieved with pyrethrum spraying, he pointed out. Experiments in rural South India in 1942 proved that the chain of malaria infection can be broken by this

method in typical small villages at a per capita cost of about five cents a year, which is economically feasible even in India. The method consists in weekly spraying of huts, cowsheds and outbuildings where the malaria-carrying mosquitoes tend to remain.

Malaria kills at least 3,000,000 persons throughout the world each year and there are at least 300,000,000 cases of malarial fever, Col. Russell stated. In such areas as Burma, New Guinea and the Solomons, malaria is by all odds the greatest disease hazard to our troops and is in some places a greater menace than the enemy.

"It seems incredible that malaria still can be so great a scourge, for it is a preventable disease regarding which we possess as complete knowledge as for any human malady," Col. Russell declared. "There have been devised potent weapons for treatment and control. But malaria persists, of all diseases today probably the most effective barrier to prosperity, contentment, and health. What a paradox! Man, with his incredible machines and his streamlined science, stricken each year in millions because he fails to outwit a mosquito carrying Death in its spittle!"

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METALLURGY

Scientists Wrest Secrets From Captured Equipment

➤ WRESTING German secrets from captured war materiel and solving armament problems of the Canadian armed forces are the two main jobs of the Division of Metallic Minerals of the Canadian Department of Mines and Resources.

A Nazi tank track pin and link has just yielded its secret to the metallurgists.

Serving as trouble shooters, they found out why a Canadian armored vehicle part broke under combat conditions. Then they developed better alloys which consume less scarce metals and a new process that is expected to double production of the part.

Canadians were having a tough time hardening a casting used in making an important war weapon. Tests by the Division of Metallic Minerals revealed that some inside areas were especially difficult to cool when the casting was dipped into water to harden it. Working for three days with only six hours sleep, a trouble-shooting scientist devised a spray apparatus which gave war industry a method to cool the casting uniformly.

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MEDICINE

Fan, Bulb and Chemical in Kit for War on Influenza

➤ A 50-WATT light bulb, a 10-inch electric fan and about one and one-half pints of propylene glycol in a can or dish with a surface area of 18 square inches are all that are needed for field studies of the possibilities of chemical war against influenza, pneumonia and other diseases that spread through the air. (*Science*, Feb. 26.)

The new simplified field equipment was developed by the personnel of Naval Laboratory Research Unit No. 1 at the University of California. Commander Albert P. Krueger is the officer in charge of the unit.

Propylene glycol vapor has previously been reported by University of Chicago scientists as an effective chemical for disinfecting air containing germs of influenza and other similar diseases. The required concentration of the vapor in a small room of 2,000 cubic feet, with five air turnovers per hour, can be achieved by the apparatus described. The light bulb is placed in the can or beaker of propylene glycol to heat and vaporize the chemical and the fan is placed one or two feet away so that it directs an air stream across the liquid surface.

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HORTICULTURE

California's Sunshine Too Bright for Tomatoes

➤ CALIFORNIA'S sunshine can be too bright. It has been indicted as the guilty agent in causing the off-coloring defect in market tomatoes known as "gray wall," by two University of California research pathologists, Dr. O. A. Lorenz and Dr. J. E. Knott, of the Experiment station at Davis, Calif. The strong sunlight beating on the exposed sides of the immature fruit, destroys the chlorophyll in the thin-walled outer cells, bringing about the discoloration that impairs marketability.

For this discovery, the two collaborators have been named as winners of the Vaughan Research Award in Horticulture for 1942. The award, which carries with it a stipend of \$500, was founded by Leonard H. Vaughan, well-known Chicago seedsman. It is intended primarily as a recognition of published work in the horticultural field that shows promise of practical application on a commercial scale.

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